

CLAIMS:

1. A vacuum tube equipped with at least one oxide cathode comprising a cathode carrier with a cathode base of a cathode metal and a cathode body with a cathode coating of an electron-emitting material that comprises an alkaline earth oxide, selected from the group formed by the oxides of calcium, strontium and barium, and a sintering inhibitor.

2. A vacuum tube as claimed in claim 1, characterized in that the sintering inhibitor is selected from the group formed by silicon oxides, niobium oxides, aluminum oxides, zirconium oxides and magnesium oxide.

3. A vacuum tube as claimed in claim 1, characterized in that the sintering inhibitor is composed of zirconium oxide.

4. A vacuum tube as claimed in claim 1, characterized in that the sintering inhibitor is composed of aluminum sesquioxide.

5. A vacuum tube as claimed in claim 1, characterized in that the electron-emitting material is doped with a metal ion having an ionic valence $\neq 2$.

6. A vacuum tube as claimed in claim 1, characterized in that the electron-emitting material is doped with a metal ion selected from the trivalent ions of lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium and the quadrivalent ion of thorium.

7. A vacuum tube as claimed in claim 1, characterized in that the electron-emitting material additionally comprises an atomic metal selected from the group formed by yttrium, scandium, europium, terbium, zirconium, titanium and hafnium.

8. A vacuum tube as claimed in claim 7, characterized in that the electron-emitting material comprises the atomic metal in a quantity in the range of 50 ppm to 300 ppm.

5 9. An oxide cathode comprising a cathode carrier with a cathode base of a cathode metal and a cathode coating of an electron-emitting material comprising an alkaline earth oxide, selected from the group formed by the oxides of calcium, strontium and barium, and a sintering inhibitor.